

264-1145

05/08/2013

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Washington, D.C. 20460



MAY 08 2013

OFFICE OF
CHEMICAL SAFETY AND
POLLUTION PREVENTION

Ms. Sherry Heins
Global Regulatory Manager
Bayer Crop Sciences LP, Biologics
1540 Drew Avenue
Davis, CA 95618

Re: Serenade Soil DPZ
EPA Reg. No. 264-1145
Submission dated March 5, 2013

Dear Ms. Heins:

The Agency has reviewed your request to amend the subject product registration. The amendment includes the following changes to the product's label:

- Conversion of the existing AgraQuest, Inc. master label into standardized Bayer CropScience (BCS) formatting and change of registration number and address;
- Addition of BCS medical and transportation emergency phone number and product use information phone number;
- Revised warranty statement and Directions for Use statement based on discussion between the EPA and BSC in March 2013;
- Correction of typographical errors and other errors identified during a label review in April 2013.

The amendment referred to above, submitted in connection with registration under FIFRA section 3(c)(7)(A), is acceptable provided that you:

1. Submit and/or cite all data required for registration of your product under FIFRA section 3(c)(5) when the Agency requires all registrants of similar products to submit such data.
2. Submit your final printed labeling before you release the product for shipment. Refer to the A-79 enclosure for a further description of a final printed label.

If these conditions are not complied with, then the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions. A stamped copy of the label and A-79 are enclosed for your records. If you have questions, please contact Michael Glikes by phone at (703) 305-6231 or by email at glikes.michael@epa.gov.

Sincerely,

Kimberly Nesci, Chief
Microbial Pesticides Branch
Biopesticides & Pollution Prevention Division

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SERENADE® SOIL DPZ™

[Alternate Brand Names: Serenade® Garden Soil Disease Concentrate]

[Alternate Brand Name: Serenade® Soil DPZ Garden Disease Control Ready to Spray]

Sub-label A: Agricultural/Commercial Use

Sub-label B: Seed Treatment

Sub-label C: Residential Use (Home and Garden Use)

ACTIVE INGREDIENT:

<i>Bacillus subtilis</i> strain QST 713 variant Soil*	1.57%
OTHER INGREDIENTS	<u>98.43%</u>
TOTAL	100.00%

*Contains a minimum of 1 x 10⁹ cfu/g
EPA Registration No. 264-1145

EPA Est. No.:

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

[Note: All text in brackets is optional language for the final printed container label.]

[Note to reviewer: Most text is in the preferred font size of 12 point for easier viewing however this would cause many of the tables to break across pages and be more difficult to understand. For this reason tables may appear in a smaller font.]

Bayer CropScience LP
P.O. Box 12014, 2 T.W. Alexander Drive
Research Triangle Park, North Carolina 27709

ACCEPTED

MAY 08 2013

Under the Federal Insecticide, Fungicide,
and Rodenticide Act, as amended, for
the pesticide registered under
EPA Reg. No. 264-1145

SERENADE® SOIL DPZ™

AN AQUEOUS SUSPENSION BIOFUNGICIDE
SUB-LABEL A

For Agricultural/Commercial Use

01/11/10A

01/11/10A

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SERENADE® SOIL DPZ™

[An Aqueous Suspension Biofungicide]

[Optional/Alternate Statement: "NOP Logo: For Organic Production"]

[Optional/Alternate Statement: "NOP Logo: Can be Used for Organic Production"]

[USE INDOORS AND OUTDOORS]

[USE IN FIELD APPLICATIONS, GREENHOUSES, GLASSHOUSES, NURSERIES, SHADEHOUSES, LANDSCAPES, INTERIORSAPES, SEEDLING PRODUCTION SITES, AND FOREST SEEDLING PRODUCTION SITES]

[USE IN TANK MIXES OR ROTATIONAL ALTERNATING SPRAY PROGRAMS WITH OTHER CROP PROTECTION PRODUCTS]

[USE IN RESISTANCE MANAGEMENT PROGRAMS]

[USE GROUND, AERIAL, CHEMIGATION AND HAND APPLIED EQUIPMENT]

[FOR AGRICULTURAL USE]

[FOR USE ON ORNAMENTALS, TREES, SHRUBS, TURF, LAWNS, SOD, GOLF COURSES (GREENS, TEES, FAIRWAYS AND ROUGHS), SEEDLINGS, AND CONIFERS]

[USE IN PRODUCTION OF CONIFERS FOR REFORESTATION]

ACTIVE INGREDIENT:

Bacillus subtilis strain QST 713 variant Soil* 1.57%

OTHER INGREDIENTS 98.43%

TOTAL 100.00%

*Contains a minimum of 1×10^9 cfu/g

EPA Registration No. 264-1145

EPA Est. No.:

For MEDICAL And TRANSPORTATION Emergencies ONLY Call 24 Hours A Day 1-800-334-7577
For **PRODUCT USE** Information 1-866-99BAYER (1-866-992-2937)

KEEP OUT OF REACH OF CHILDREN CAUTION

Bayer CropScience LP

P.O. Box 12014, 2 T.W. Alexander Drive

Research Triangle Park, North Carolina 27709

[Reference Statement for Booklets: For ADDITIONAL PRECAUTIONARY STATEMENTS and

DIRECTIONS FOR USE: See Inside Booklet. See FIRST AID STATEMENT on the back panel.] [

[USE OF PRODUCT INDICATES ACCEPTANCE OF "CONIDITIONS FOR SALE AND WARRANTY"]

Net Contents:

PRECAUTIONARY STATEMENTS

CAUTION

FIRST AID

- Have the product container or label with you when calling a poison control center or doctor or going for treatment.
- In case of emergency call toll free the Bayer CropScience Emergency Response Telephone No. 1-800-334-7577.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Unless specifically differentiated, the PPE requirements that follow apply to both Worker Protection Standard (WPS) uses (in general, agricultural-plant uses are covered by the Worker Protection Standard (40 CFR Part 170)) and Non-WPS uses.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes and socks

Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

[OPTIONAL: ENGINEERING CONTROLS]

[OPTIONAL STATEMENT: When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240(d)(4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS.]

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

For terrestrial uses: Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate. Do not apply when weather

conditions favor drift or run-off from treated areas.

EMERGENCY INFORMATION

For emergencies such as leaks or spills, call 24-hour toll-free BAYER hotline at 1.800.334-7577.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. [For use only as described on this label. Not for isolation or deformulation. Do not culture.]

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 4 hours.

For early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil or water, wear:

- coveralls
- chemical resistant gloves (made of waterproof material)
- shoes and socks

Exception: If the product is soil-injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

[Commercial Treatment of plants that are in ornamental gardens, parks, golf courses, and public or residential turf and grounds, and that are intended only for aesthetic purposes or climatic modification:]

Keep unprotected persons out of treated areas until sprays have dried.

BASIC USE INFORMATION

Serenade Soil DPZ is a broad spectrum biofungicide for the prevention, suppression and control of soil borne diseases on a wide range of fruits and vegetables as well as cotton. Serenade Soil DPZ enhances germination and plant growth by suppressing soil diseases such as those caused by *Rhizoctonia*, *Pythium*, *Fusarium*, *Verticillium* and *Phytophthora*. See the application tables for specific information.

INTEGRATED PEST MANAGEMENT (IPM)

Integrate Serenade Soil DPZ into an overall disease and pest management strategy whenever fungicide use is necessary. Follow practices known to reduce disease development. Consult local agricultural authorities for specific IPM strategies developed for your crop(s) and location.

Be sure use of this product conforms to resistance management strategies, which may include rotating and/or tank mixing with other products with different modes of action.

USE RATE DETERMINATION

Carefully read and follow all label directions, use rates and restrictions. Prepare only the amount of product solution required to treat the measured acreage. Apply Serenade Soil DPZ by ground, by air or via chemigation in sufficient water or liquid fertilizer to provide uniform coverage of the soil surface.

PREHARVEST INTERVAL

Serenade Soil DPZ can be applied up to and including the day of harvest.

APPLICATION INSTRUCTIONS

Under moderate to severe disease pressure, for improved performance, increase rates and reduce spray intervals according to the application instructions or use Serenade Soil DPZ in a tank-mix or rotational program with other registered fungicides.

GENERAL: Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather- related factors determines the potential for spray drift. The applicator and the grower/treatment coordinator are responsible for considering all of these factors when making decisions. Where states have more stringent regulations, they should be observed.

GROUND: Be sure to maintain agitation during mixing and application to assure uniform product suspension. Serenade Soil DPZ can be applied in commonly used ground equipment, hose-end, pressurized, greenhouse and hand-held sprayers. To achieve good coverage, use proper spray pressure, gallonage per acre, nozzles, nozzle spacing and ground speed. Consult spray nozzle and accessory catalogues for specific information on proper equipment calibration.

AERIAL: This product can be applied by aerial application. Refer to the Aerial Drift Reduction Advisory Information section of this label for general directions and precautions. Use the application rate indicated for the appropriate crop in sufficient water to achieve thorough coverage, typically between 3 – 20 gallons of water per acre depending upon the crop. Three gallons of water per acre is the minimum.

CHEMIGATION: This product can be applied through sprinkler (center pivot, lateral move, end tow, side (wheel) roll, traveler, solid set, and hand move) or drip type irrigation systems. Refer to the Chemigation Directions for Use section of this label for general directions and precautions. Use the application rate indicated for the appropriate crop as specified in the Application Rate tables of this label.

MIXING INSTRUCTIONS

MIXING: Serenade Soil DPZ must be diluted with water. Partially fill the spray tank with clean water and begin agitation. Add the specified amount of Serenade Soil DPZ to the tank. Finish filling the tank to the necessary volume to obtain the proper spray concentration. It is critical that the spray solution be agitated during mixing and application to assure a uniform suspension. Do not allow spray mixture to stand overnight or for prolonged periods. [Optional Statement: Maintain a spray solution pH between 4.5 and 8.5.]

Serenade Soil DPZ may be tank mixed with other registered pesticides to enhance plant disease control. This product cannot be mixed with any product with a prohibition against such mixing. When tank mixing Serenade Soil DPZ with other registered pesticides, always read and follow all use directions, restrictions, and precautions of both Serenade Soil DPZ and the tank-mix partner(s). Use of the resulting tank mix must be in accordance with the more restrictive label limitations and precautions. Do not exceed label dosage rates.

COMPATIBILITY: Do not combine Serenade Soil DPZ in the spray tank with pesticides, surfactants or fertilizers if there has been no previous experience or use of the combination to show it is physically compatible, effective and non-injurious under your

use conditions.

Serenade Soil DPZ is compatible with many commonly used pesticides, fertilizers, adjuvants and surfactants but has not been fully evaluated with all of these. To ensure compatibility of tank-mix combinations, evaluate them prior to use as follows: Using a suitable container, add proportional amounts of product to water. Add wettable powders first, followed by water dispersible granules, then by liquid flowables and lastly, emulsifiable concentrates. Mix thoroughly and let stand for at least five minutes. If the combination stays mixed or can be remixed, it is physically compatible. Test the combination on a small portion of the crop to be treated to ensure that a phytotoxic response will not occur as a result of application. [OPTIONAL STATEMENT: Do not use with penetrant-type adjuvants.]

CHEMIGATION DIRECTIONS FOR USE

General Requirements:

- 1) Apply this product only through sprinkler (including center pivot, lateral move, end tow, side (wheel) roll, traveler, solid set or hand move) or drip type irrigation systems. Do not apply this product through any other type of irrigation system.
- 2) Crop injury or lack of effectiveness can result from non-uniform distribution of treated water.
- 3) Ensure that the irrigation system used is properly calibrated and if you have questions, call the State Extension Service specialists, the equipment manufacturer or other experts.
- 4) Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
- 5) A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make any necessary adjustments should the need arise.

Requirements for Chemigation Systems Connected to Public Water Systems:

- 1) Public water supply means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of 25 individuals daily at least 60 days throughout the year.
- 2) Chemigation systems connected to the public water systems must contain a functional, reduced-pressure zone (RPZ), backflow preventer or the functional equivalent in the water supply upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top of the overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
- 3) The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back towards the injection pump.
- 4) The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the

system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

- 5) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
- 6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- 7) Do not apply when wind speed favors drift beyond the area intended for treatment.
- 8) Remove scale, pesticide residues, and other foreign matter from the chemical supply tank and entire injector system. Flush with clean water. Failure to provide a clean tank, void of scale or residues may cause product to lose effectiveness or strength.
- 9) Do not combine Serenade Soil DPZ with pesticides, surfactants or fertilizers for application through chemigation equipment unless prior experience has shown the combination physically compatible, effective and non-injurious under conditions of use. Serenade Soil DPZ has not been fully evaluated for compatibility with all adjuvants or surfactants. Conduct a spray compatibility test if mixture with adjuvants or surfactants is planned.
- 10) Maintain agitation in the pesticide supply tank.
- 11) Apply Serenade Soil DPZ during the last half of the water application.
- 12) Dilute Serenade Soil DPZ in enough water to be able to draw through system for the last half of the water application.

Sprinkler Chemigation Requirements:

- 1) The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.
- 2) The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- 3) The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- 4) The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- 5) The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- 6) Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- 7) Do not apply when wind speed favors drift beyond the area intended for treatment.
- 8) Remove scale, pesticide residues, and other foreign matter from the chemical supply tank and entire injector system. Flush with clean water. Failure to provide a clean tank, void of scale or residues may cause product to lose effectiveness or strength.

- 9) Do not combine Serenade Soil DPZ with pesticides, surfactants or fertilizers for application through chemigation equipment unless prior experience has shown the combination physically compatible, effective and non-injurious under conditions of use. Serenade Soil DPZ has not been fully evaluated for compatibility with all adjuvants or surfactants. Conduct a spray compatibility test if mixture with adjuvants or surfactants is planned.

Center Pivot, Lateral Move, End Tow, and Traveler Irrigation Equipment (Use only with electric or oil hydraulic drive systems which provide a uniform water distribution):

- Determine size of area to be treated.
- Determine the time required to apply no more than 1/4 inch of water (6,750 gallons water per acre) over the area to be treated when the system and injection equipment are operated at normal pressures recommended by the equipment manufacturer. Run system at 80 to 95% of manufacturer's rated capacity.
- Using only water, determine the injection pump output when operated at normal line pressure.
- Determine the amount of Serenade Soil DPZ fungicide required to treat area.
- Add required amount of Serenade Soil DPZ fungicide and sufficient water to meet the injection time requirements of the solution tank.
- Maintain constant solution tank agitation during the injection period.
- Stop injection equipment after treatment is completed. Continue to operate the system until Serenade Soil DPZ fungicide solution has cleared the sprinkler head.

Solid Set, Side (Wheel) Roll, and Hand Move Irrigation Equipment:

- Determine acreage covered by sprinkler.
- Fill injector solution tank with water and adjust flow rate to use contents over a 10- to 30-minute interval.
- Determine the amount of Serenade Soil DPZ fungicide required to treat area.
- Add the required amount of Serenade Soil DPZ fungicide into the same quantity of water used to calibrate the injection equipment.
- Maintain constant solution tank agitation during the injection period.
- Operate system at normal pressures recommended by the manufacturer of the injection equipment and used for the time interval established during calibration.
- Inject Serenade Soil DPZ fungicide at the end of the irrigation cycle or as a separate application to maximize soil fungicide retention.
- Stop injection equipment after treatment is completed. Continue to operate the system until Serenade Soil DPZ fungicide solution has cleared the last sprinkler head.

Drip Chemigation Requirements:

- 1) The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.
- 2) The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

- 3) The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- 4) The system must contain functional inter-locking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- 5) The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- 6) Systems must use a metering pump such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- 7) Remove scale, pesticide residues, and other foreign matter from the chemical supply tank and entire injector system. Flush with clean water. Failure to provide a clean tank, void of scale or residues may cause product to lose effectiveness or strength.
- 8) Do not combine Serenade Soil DPZ with pesticides, surfactants or fertilizers for application through chemigation equipment unless prior experience has shown the combination physically compatible, effective and non-injurious under conditions of use. Serenade Soil DPZ has not been fully evaluated for compatibility with all adjuvants or surfactants. Conduct a spray compatibility test if mixture with adjuvants or surfactants is planned.
- 9) Maintain agitation in the pesticide supply tank.
- 10) Apply Serenade Soil DPZ during the last half of the water application.
- 11) Dilute Serenade Soil DPZ in enough water to be able to draw through system for the last half of the water application.

AERIAL DRIFT REDUCTION ADVISORY INFORMATION – For Pre-plant Uses Only

BASIC: Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather- related factors determines the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions. Where states have more stringent regulations, they should be observed.

INFORMATION ON DROPLET SIZE: The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

CONTROLLING DROPLET SIZE: Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets. Pressure - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When high flow rates are needed, use higher flow rate nozzles instead of increasing pressure. Number of Nozzles - Use the minimum number of nozzles that provide uniform coverage. Nozzle

Orientation - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.

Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

BOOM WIDTH: For aerial applications, the boom width must not exceed 75% of the wingspan or 90% of the rotary blade. If application includes a no-spray zone, do not release spray at a height greater than 10 feet above the ground.

APPLICATION HEIGHT: Do not make application at a height greater than 10 feet above the soil unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

SWATH ADJUSTMENT: Use upwind swath displacement. When applications are made with a crosswind, the swath will be displaced downward. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

WIND: Drift potential is lowest between wind speeds of 3 - 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 3 mph due to variable wind direction and high inversion potential. **NOTE:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

TEMPERATURE AND HUMIDITY: When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

TEMPERATURE INVERSIONS: Do not apply during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small, suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

SENSITIVE AREAS: The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for

threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas). Do not allow spray to drift from the application site and contact people, structures people occupy at any time and the associated property, parks and recreation areas, non-target crops, aquatic and wetland areas, woodlands, pastures, rangelands, or animals.

IMPORTANT: READ CONDITIONS FOR SALE AND WARRANTY BEFORE USE

FOR USE AS A SOIL TREATMENT ON SELECT AGRICULTURAL FIELD CROPS

Serenade Soil DPZ has a 0-Day PreHarvest Interval for all crops contained on this label. The restricted-entry interval (REI) for soil-injected or soil-incorporated applications is 4 hours. For other application types the (REI) is four hours.

Under moderate to severe disease pressure, for improved performance, increase rates and reduce spray intervals as stated or use Serenade Soil DPZ in a tank-mix or rotational program with other registered fungicides.

Serenade Soil DPZ is a broad spectrum biofungicide for the prevention, suppression and control of soil borne diseases on a wide range of fruits and vegetables as well as cotton. Serenade Soil DPZ enhances germination and plant growth by suppressing soil diseases such as those caused by *Rhizoctonia*, *Pythium*, *Fusarium*, *Verticillium* and *Phytophthora*. See the application tables for specific information.

Moving Serenade Soil DPZ into the Root or Seed Zone:

To ensure maximum activity on soilborne pathogens, Serenade Soil DPZ must be moved into the seed or root zone of the plant. Follow the required crop directions. Placement in the seed or root zone includes in-furrow sprays, soil injections, crown dips. Incorporation includes pre-plant incorporated applications, soil drenches, or shank applications. For soil surface sprays, rainfall will move the fungicide into the seed or root zone, but if rain is not expected within 24 hours after application, mechanically incorporate (before planting) or sprinkler irrigate (after planting) with 1/2 to 1 inch of water.

All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications:

Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Serenade Soil DPZ in the appropriate amount of water per acre. Use the stated higher rates when the weather conditions are expected to be conducive for disease development, if the field has a history of disease problems, or if minimum/low till programs are in place. Serenade Soil DPZ can be mixed with chemical fungicides registered for soil applications.

Ground Applications (Broadcast): Apply in a minimum of 20 gallons per water per acre, unless specified otherwise.

Ground Application (Banded): Application rates in the Directions for Use are generally expressed as an amount per acre which refers to the total crop area to be treated. If using a banded application, use proportionally less product using the formula below:

$$\frac{\text{band width in inches}}{\text{row spacing in inches}} \times \text{broadcast rate} = \text{amount needed}$$

per acre per acre of field

Soil Surface (Drench) Application at Planting: Use at planting, seeding, or transplant. Apply finished spray mixture at a rate to thoroughly soak the growing media through the root zone as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems.

Shanked-In or Injected Applications: Serenade Soil DPZ can be shanked-in or injected into the soil prior to, at, or post-planting/post-transplanting of crops alone or with most types of liquid nutrients.

In-Furrow Applications: Apply Serenade Soil DPZ as an in-furrow spray in the appropriate amount of water per acre for the crop at planting. Mount the spray nozzle so the spray is directed in the furrow just before the seeds are covered. The following table provides common row spacing and the amount of Serenade Soil DPZ to apply per acre.

In-Furrow Applications		fl oz of Serenade Soil DPZ/ 1000 row-ft		
Row Spacing (in.)	Row Feet per Acre	64 fl oz/A	128 fl oz/A	192 fl oz/A
12	43411	1.5	2.9	4.4
22	23760	2.7	5.4	8.1
30	17424	3.7	7.3	11.0
32	16315	3.9	7.8	11.8
34	15374	4.2	8.3	12.5
36	14520	4.4	8.8	13.2
38	13754	4.7	9.3	14.0
40	13068	4.9	9.8	14.7

Soil Surface (Drench) Application at Any Stage of Growth: Apply the finished spray mixture to the surface of the soil as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g. via hydraulic nozzles at low volumes) it is important to irrigate to move the material into the seed, root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle.

Application Rates of Serenade Soil DPZ for Soil Uses in Field for Soil Borne/Seedling Disease Control

Crops	Disease	Rate	Application Instructions Field Soil Surface (Drench), Shanked-In, Injected and In-furrow
Artichoke	Damping Off Pythium spp. Verticillium Wilt Verticillium dahliae	Soil Drench 1 – 6 qt/acre	<p>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications:</p> <p>Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Serenade Soil DPZ in the appropriate amount of water per acre. Use the stated higher application rates when the weather conditions are expected to be conducive to disease development, if the field has a history of disease problems, or if minimum/low till programs are in place. Serenade Soil DPZ can be mixed with chemical fungicides registered for soil applications.</p> <p>Soil Surface (Drench) Application At Planting: Use at planting, seeding or transplant. Apply finished spray mixture at a rate to thoroughly soak the growing media through the root zone as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems.</p> <p>Shanked-In and Injected Applications: Serenade Soil DPZ can be shanked-in or injected into the soil prior to-, at-, or post-planting/transplanting of crops alone or with most types of liquid nutrients.</p> <p>In-Furrow Applications: For in-furrow applications, apply Serenade Soil DPZ as an in-furrow spray in the appropriate amount of water per acre for the crop at planting. Mount the spray nozzle so the spray is directed in the furrow just before the seeds are covered.</p> <p>Soil Surface (Drench) Application At Any Stage of Growth: Apply the finished spray mixture to the surface of the soil as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g. via hydraulic nozzles at low volumes) it is important to irrigate to move the material into the seed, root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle.</p>
Asparagus	<i>Fusarium</i> spp. <i>Phytophthora</i> spp.	In-furrow 1.5 – 14.7 fl oz per 1000 row feet	
Brassica Broccoli Cabbage Cauliflower Brussels Sprouts Collards Kale Mustard Greens Kohlrabi and other brassica crops	Clubroot <i>Plasmodiophora brassicae</i> <i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Sclerotinia</i> spp. <i>Verticillium</i> spp.		
Bulb Vegetables Onion Garlic Shallots and other bulb vegetables including those grown for seed production	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Phoma</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.		
Cereal Grains Barley Corn Millets Oat Rice Rye Sorghum Triticale Wheat and other cereal grain crops	<i>Bipolaris sorokiniana</i> <i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Tilletia indica</i> <i>Verticillium</i> spp.		

Crops	Disease	Rate	Application Instructions Field Soil Surface (Drench), Shanked-In, Injected and In-furrow
<p>Clover, Forage Alfalfa, Forage</p> <p>Other animal feed nongrass crops including those grown for seed production</p>	<p>Fusarium Wilt <i>Fusarium oxysporum</i></p> <p>Phymatotrichum Root Rot <i>Phymatotrichum omnivorum</i></p> <p>Phytophthora Root and Crown Rot <i>Phytophthora megasperma</i></p> <p>Rhizoctonia Crown and Stem Rot <i>Rhizoctonia solani</i></p> <p>Seedling or Damping Off Diseases <i>Pythium ultimum</i> <i>Pythium irregulare</i> <i>Pythium violae</i> <i>Phytophthora megasperma</i> <i>Rhizoctonia solani</i></p> <p>Verticillium Wilt <i>Verticillium albo-atrum</i></p> <p>White Mold <i>Sclerotinia sclerotiorum</i></p>	<p>Soil Drench 1 – 6 qt/acre</p> <p>In-furrow 1.5 – 14.7 fl oz per 1000 row feet</p>	<p>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications: Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Serenade Soil DPZ in the appropriate amount of water per acre. Use the stated higher application rates when the weather conditions are expected to be conducive to disease development, if the field has a history of disease problems, or if minimum/low till programs are in place. Serenade Soil DPZ can be mixed with chemical fungicides registered for soil applications.</p> <p>Soil Surface (Drench) Application At Planting: Use at planting, seeding or transplant. Apply finished spray mixture at a rate to thoroughly soak the growing media through the root zone as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems.</p> <p>Shanked-In and Injected Applications: Serenade Soil DPZ can be shanked-in or injected into the soil prior to-, at-, or post-planting/transplanting of crops alone or with most types of liquid nutrients.</p> <p>In-Furrow Applications: For in-furrow applications, apply Serenade Soil DPZ as an in-furrow spray in the appropriate amount of water per acre for the crop at planting. Mount the spray nozzle so the spray is directed in the furrow just before the seeds are covered.</p> <p>Soil Surface (Drench) Application At Any Stage of Growth: Apply the finished spray mixture to the surface of the soil as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g. via hydraulic nozzles at low volumes) it is important to irrigate to move the material into the seed, root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle.</p>

Crops	Disease	Rate	Application Instructions Field Soil Surface (Drench), Shanked-In, Injected and In-furrow
Corn Sweet Corn Popcorn Seed Corn Silage Corn Field Corn and other corn crops	<i>Fusarium</i> spp. <i>Macrophomina</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Ustilago</i> spp. <i>Sphacelotheca</i> spp. <i>Verticillium</i> spp.	Soil Drench 1 – 6 qt/acre In-furrow 1.5 – 14.7 fl oz per 1000 row feet	All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications: Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Serenade Soil DPZ in the appropriate amount of water per acre. Use the stated higher application rates when the weather conditions are expected to be conducive to disease development, if the field has a history of disease problems, or if minimum/low till programs are in place. Serenade Soil DPZ can be mixed with chemical fungicides registered for soil applications. Soil Surface (Drench) Application At Planting: Use at planting, seeding or transplant. Apply finished spray mixture at a rate to thoroughly soak the growing media through the root zone as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. Shanked-In and Injected Applications: Serenade Soil DPZ can be shanked-in or injected into the soil prior to-, at-, or post-planting/transplanting of crops alone or with most types of liquid nutrients. In-Furrow Applications: For in-furrow applications, apply Serenade Soil DPZ as an in-furrow spray in the appropriate amount of water per acre for the crop at planting. Mount the spray nozzle so the spray is directed in the furrow just before the seeds are covered. Soil Surface (Drench) Application At Any Stage of Growth: Apply the finished spray mixture to the surface of the soil as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g. via hydraulic nozzles at low volumes) it is important to irrigate to move the material into the seed, root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle.
Cotton	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.		
Cucurbits Cucumber Cantaloupe Melon Muskmelon Squash Watermelon and other cucurbit crops	<i>Acremonium</i> spp. <i>Fusarium</i> spp. <i>Macrophomina</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Thielaviopsis</i> spp. <i>Verticillium</i> spp.		
Fruiting Vegetables Pepper Tomato Eggplant Ground Cherry Tomatillo Okra and other fruiting vegetables	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pseudomonas</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. Southern Blight <i>Sclerotium rolfsii</i> <i>Verticillium</i> spp.		
Leafy Vegetables Lettuce Celery Spinach Parsley Radicchio and other leafy vegetables crops including those grown for seed production	Black rot <i>Xanthomonas</i> spp. Club root <i>Plasmodiophora brassicae</i> <i>Fusarium</i> spp. <i>Phoma</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.		

Crops	Disease	Rate	Application Instructions Field Soil Surface (Drench), Shanked-In, Injected and In-furrow
Leafy Vegetables Lettuce Celery Spinach Parsley Radicchio and other leafy vegetables crops including those grown for seed production	Sclerotinia Head and Leaf Drop <i>Sclerotinia</i> spp.	Soil Drench 1 – 6 qt/acre	Soil Surface (Drench) Application At Planting: <u>For control of early Sclerotinia Head and Leaf Drop:</u> Apply as a directed spray with multiple nozzles per each seed line in sufficient water to ensure thorough coverage of soil surface. Apply at planting or immediately following planting but prior to crop emergence as a 4- to 6-inch seed line treatment. Use the stated higher rates under conditions conducive to moderate to severe disease pressure. Light irrigation after application to incorporate the product may improve disease control.

Crops	Disease	Rate	Application Instructions Field Soil Surface (Drench), Shanked-In, Injected and In-furrow
<p>Legumes/ Vegetables (succulent and dried beans and peas)</p> <p>Beans Green Beans Snap Beans Shell Beans Soybeans Dry Beans Garbanzo Beans Lima Beans Peas Chick Peas Split Peas Lentils and other legume/vegetable crops including those grown for seed production</p>	<p><i>Aphanomyces</i> spp. <i>Fusarium</i> spp. <i>Macrophomina</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Sclerotinia</i> spp. <i>Thielaviopsis</i> spp. <i>Verticillium</i> spp.</p>	<p>Soil Drench 1 – 6 qt/acre</p> <p>In-furrow 1.5 – 14.7 fl oz per 1000 row feet</p>	<p>All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications:</p> <p>Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Serenade Soil DPZ in the appropriate amount of water per acre. Use the stated higher application rates when the weather conditions are expected to be conducive to disease development, if the field has a history of disease problems, or if minimum/low till programs are in place. Serenade Soil DPZ can be mixed with chemical fungicides registered for soil applications.</p> <p>Soil Surface (Drench) Application At Planting: Use at planting, seeding or transplant. Apply finished spray mixture at a rate to thoroughly soak the growing media through the root zone as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems.</p> <p>Shanked-In and Injected Applications: Serenade Soil DPZ can be shanked-in or injected into the soil prior to-, at-, or post-planting/transplanting of crops alone or with most types of liquid nutrients.</p> <p>In-Furrow Applications: For in-furrow applications, apply Serenade Soil DPZ as an in-furrow spray in the appropriate amount of water per acre for the crop at planting. Mount the spray nozzle so the spray is directed in the furrow just before the seeds are covered.</p> <p>Soil Surface (Drench) Application At Any Stage of Growth: Apply the finished spray mixture to the surface of the soil as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g. via hydraulic nozzles at low volumes) it is important to irrigate to move the material into the seed, root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle.</p>
<p>Oil Seed Crops</p> <p>Canola Castor Coconut Cotton Flax Oil Palm Olive Peanut Rapeseed Safflower Sesame Sunflower Soybeans and other oil seed crops including those grown for seed production</p>	<p>Clubroot <i>Plasmodiophora brassicae</i> <i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Thielaviopsis</i> spp. <i>Verticillium</i> spp.</p>		
<p>Peanut</p>	<p><i>Aspergillus</i> spp. <i>Cylindrocladium</i> spp. <i>Fusarium</i> spp. <i>Macrophomina</i> spp. <i>Phoma</i> spp. <i>Phymatotrichum</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Rhizopus</i> spp. <i>Sclerotinia</i> spp. <i>Verticillium</i> spp.</p>		

Crops	Disease	Rate	Application Instructions Field Soil Surface (Drench), Shanked-In, Injected and In-furrow
Pome Fruit Apple Crabapple Pear Quince Mayhaw and other pome fruit	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	Soil Drench 1 – 6 qt/acre In-furrow 1.5 – 14.7 fl oz per 1000 row feet	All Soil Surface (Drench), Shanked-In, Injected and In-Furrow Applications: Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Serenade Soil DPZ in the appropriate amount of water per acre. Use the stated higher application rates when the weather conditions are expected to be conducive to disease development, if the field has a history of disease problems, or if minimum/low till programs are in place. Serenade Soil DPZ can be mixed with chemical fungicides registered for soil applications.
Root / Tuber and Corm Vegetables Carrot Potato Sweet Potato Cassava Beets Ginger Horseradish Radish Ginseng Turnip and other root/ tuber and corm crops including those grown for seed production	<i>Agrobacterium</i> spp. <i>Erwinia</i> spp. <i>Fibularhizoctonia</i> spp. <i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Sclerotinia</i> spp. <i>Sclerotium rolfsii</i> <i>Streptomyces scabies</i> Clubfoot <i>Plasmodiophora brassicae</i> <i>Thielaviopsis</i> spp. <i>Verticillium</i> spp.		Soil Surface (Drench) Application At Planting: Use at planting, seeding or transplant. Apply finished spray mixture at a rate to thoroughly soak the growing media through the root zone as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems.
Stone Fruit Apricot Cherry Nectarine Peach Plum Prune and other stone fruit crops	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.		Shanked-In and Injected Applications: Serenade Soil DPZ can be shanked-in or injected into the soil prior to-, at-, or post-planting/transplanting of crops alone or with most types of liquid nutrients.
Tobacco			In-Furrow Applications: For in-furrow applications, apply Serenade Soil DPZ as an in-furrow spray in the appropriate amount of water per acre for the crop at planting. Mount the spray nozzle so the spray is directed in the furrow just before the seeds are covered.
Strawberry	Armillaria Root Rot <i>Armillaria</i> spp. Black Root Rot (complex) Charcoal Rot <i>Macrophomina phaseolina</i> Leather Rot <i>Phytophthora cactorum</i> Phytophthora Crown Rot <i>Phytophthora</i> spp. Red Stele <i>Phytophthora fragariae</i> Verticillium Wilt <i>Verticillium dahliae</i>		Soil Surface (Drench) Application At Any Stage of Growth: Apply the finished spray mixture to the surface of the soil as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g. via hydraulic nozzles at low volumes) it is important to irrigate to move the material into the seed, root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle.

Crops	Disease	Rate	Application Instructions Field Soil Surface (Drench)
Berry Blueberry Blackberry Raspberry Loganberry Huckleberry Cranberry Gooseberry Elderberry Currant Caneberry Bushberry and other berry crops	Armillaria Root Rot <i>Armillaria</i> spp. Phytophthora Root Rot <i>Phytophthora</i> spp. Verticillium Wilt <i>Verticillium dahlia</i>	Soil Drench 1 – 6 qt/acre In-furrow 1.5 – 14.7 fl oz per 1000 row feet	All Soil Surface (Drench) Applications: Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Serenade Soil DPZ in the appropriate amount of water per acre. Use the stated higher application rates when the weather conditions are expected to be conducive to disease development, if the field has a history of disease problems, or if minimum/low till programs are in place. Serenade Soil DPZ can be mixed with chemical fungicides registered for soil applications. Soil Surface (Drench) Application At Planting: Use at planting, seeding or transplant. Apply finished spray mixture at a rate to thoroughly soak the growing media through the root zone as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. Soil Surface (Drench) Application At Any Stage of Growth: Apply the finished spray mixture to the surface of the soil as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g. via hydraulic nozzles at low volumes) it is important to irrigate to move the material into the seed, root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle. Soil spray (broadcast or band): Apply in the spring before the plants start growing in sufficient water to provide uniform coverage. Two additional applications may be made to coincide with periods most favorable for root rot development. For banded applications, a 3-ft. band at the base of the plants is recommended.
Olive	Armillaria spp. Verticillium spp.		
Grape	Armillaria Root Rot <i>Armillaria mellea</i> Oak Root Fungus Phytophthora spp.		

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Crops	Disease	Rate	Application Instructions Field Soil Surface (Drench)
Citrus Orange Grapefruit Lemon Tangerine Tangelo Pummelo and other citrus crops	Dry Root Rot <i>Fusarium solani</i> Phytophthora Root Rot <i>Phytophthora citrophthora</i> or <i>Phytophthora parasitica</i>	1 – 6 qt/acre In-furrow 1.5 – 14.7 fl oz. per 1000 row feet	<p>Citrus Resets or New Plantings: Make the first application at the time of planting. Apply to soil beneath the tree canopy or apply through irrigation water (micro-sprinkler or drip). Make up to 2 additional applications per year at 3 month intervals or when root growth flushes occur.</p> <p>In FL, PR, and TX, apply as a soil spray or through injection. Two or three applications per year are recommended (spring + summer, summer + fall, or spring + summer + fall).</p> <p>Water ring drench: Apply 5 gals of the product mix (equivalent to 1 – 6 qt/acre) around the base of each tree within the watering ring of resets or new plantings.</p> <p>Individual Tree Treatment for Resets/New Plantings: Mix desired amount of Serenade Soil DPZ in a water solution. Apply as a directed spray to individual trees (generally 8-12 fl oz/ tree) around the base of the tree and outwards to cover the fibrous root system. Follow with sprinkler irrigation to move product into the root zone. May be tank mixed with other approved pesticides.</p> <p>Established Plantings: Apply to soil beneath the tree canopy or apply through irrigation water (micro-sprinkler or drip). Begin applications during the spring root flush period. One or two additional applications may be made to coincide with flushes of root growth.</p>

FOR SOIL APPLICATION ON SELECT AGRICULTURAL GREENHOUSE CROPS

Application Rates of Serenade Soil DPZ for Selected Greenhouse Crops Soil Applications			
Greenhouse Crops	Disease	Rate qt /100 gallons spray mix	Application Instructions Greenhouse Soil Surface (Drench)
Brassica Broccoli Cabbage Cauliflower Brussels Sprouts Collards Kale Mustard Greens Kohlrabi and other brassica crops	Clubroot <i>Plasmodiophora brassicae</i> <i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Sclerotinia</i> spp. <i>Verticillium</i> spp.	1 - 6	<p>All Soil Surface (Drench) Applications:</p> <p>Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Serenade Soil DPZ per 100 gallons of spray mix. For each treatment, apply no more than 6 qt of Serenade Soil DPZ per acre; equivalent to 4.4 fl oz of Serenade Soil DPZ per 1000 ft²[sq ft]. Serenade Soil DPZ can be mixed with chemical fungicides registered for soil applications.</p> <p>Soil Surface (Drench) Application At Planting: Use at planting, seeding or transplant. Apply finished spray mixture at a rate to thoroughly soak the growing media through the root zone as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems.</p> <p>Soil Surface (Drench) Application At Any Stage of Growth: Apply the finished spray mixture to the surface of the soil as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g. via hydraulic nozzles at low volumes) it is important to irrigate to move the material into the seed, root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle.</p>
Bulb Vegetables Onion Garlic Shallots and other bulb vegetables	<i>Fusarium</i> spp. <i>Phoma</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.		
Cucurbits Cucumber Cantaloupe Melon Muskmelon Squash Watermelon and other cucurbits	<i>Acremonium</i> spp. <i>Fusarium</i> spp. <i>Macrophomina</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Thielaviopsis</i> spp. <i>Verticillium</i> spp.		
Fruiting Vegetables Pepper Tomato Eggplant and other fruiting vegetables	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pseudomonas</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. Southern Blight <i>Sclerotium rolfsii</i> <i>Verticillium</i> spp.		

Greenhouse Crops	Disease	Rate qt/100 gallons spray mix	Application Instructions Greenhouse Soil Surface (Drench)
Herbs/ Spices	<i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.	1 - 6	All Soil Surface (Drench) Applications: Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Serenade Soil DPZ per 100 gallons of spray mix. For each treatment, apply no more than 6 qt of Serenade Soil DPZ per acre; equivalent to 4.4 fl oz of Serenade Soil DPZ per 1000 ft ² [sq ft]. Serenade Soil DPZ can be mixed with chemical fungicides registered for soil applications.
Leafy Vegetables Lettuce Celery Spinach Parsley Radicchio and other leafy vegetables	Black rot <i>Xanthomonas</i> spp. Club root <i>Plasmiodiophora brassicae</i> <i>Fusarium</i> spp. <i>Phoma</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Verticillium</i> spp.		Soil Surface (Drench) Application At Planting: Use at planting, seeding or transplant. Apply finished spray mixture at a rate to thoroughly soak the growing media through the root zone as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems.
	Sclerotinia Head and Leaf Drop <i>Sclerotinia</i> spp.		For control of early Sclerotinia Head and Leaf Drop: Apply as a directed spray with multiple nozzles per each seed line in sufficient water to ensure thorough coverage of soil surface. Apply at planting or immediately following planting but prior to crop emergence as a 4- to 6-inch seed line treatment. Use the stated higher rates under conditions conducive to moderate to severe disease pressure. Light irrigation after application to incorporate the product may improve disease control.

Greenhouse Crops	Disease	Rate qt/100 gallons spray mix	Application Instructions Greenhouse Soil Surface (Drench)
Root / Tuber Carrot Potato Sweet Potato Beets Ginger Horseradish Radish Ginseng Turnip and other root/ tuber crops	Agrobacterium spp. Clubfoot <i>Plasmiodiophora brassicae</i> Erwinia spp Fibularhizoctonia spp. Fusarium spp. Phytophthora spp. Pythium spp. Rhizoctonia spp. Sclerotinia spp. Sclerotium rolfsii Streptomyces scabies Thielaviopsis spp. Verticillium spp.	1 - 6	<p>All Soil Surface (Drench) Applications:</p> <p>Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Serenade Soil DPZ per 100 gallons of spray mix. For each treatment, apply no more than 6 qt of Serenade Soil DPZ per acre; equivalent to 4.4 fl oz of Serenade Soil DPZ per 1000 ft² [sq ft]. Serenade Soil DPZ can be mixed with chemical fungicides registered for soil applications.</p> <p>Soil Surface (Drench) Application At Planting: Use at planting, seeding or transplant. Apply finished spray mixture at a rate to thoroughly soak the growing media through the root zone as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems.</p> <p>Soil Surface (Drench) Application At Any Stage of Growth: Apply the finished spray mixture to the surface of the soil as a drench or directed spray using hand-held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler or drip irrigation systems. When applying as a spray (e.g. via hydraulic nozzles at low volumes) it is important to irrigate to move the material into the seed, root or transplant zone. Normal operation of overhead sprinklers and drip irrigation systems are sufficient for effective applications. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle.</p>
Strawberry	Armillaria Root Rot <i>Armillaria spp.</i> Black Root Rot <i>(complex)</i> Charcoal Rot <i>Macrophomina phaseolina</i> Leather Rot <i>Phytophthora cactorum</i> Phytophthora Crown Rot <i>Phytophthora spp.</i> Red Stele <i>Phytophthora fragariae</i> Verticillium Wilt <i>Verticillium dahliae</i>		

Soil Drench Applications on Ornamentals, Trees, Shrubs, Flowers, Bedding Plants, Tropical Plants, Seedlings, Conifers, Fruits and Vegetables: [Agricultural], [Commercial], [Residential Use], [Indoors and Outdoors], [Greenhouses, Glasshouses, Nurseries, Shadehouses], [Open and Enclosed]

Serenade Soil DPZ is a broad spectrum biofungicide for the prevention, suppression and control of soil borne diseases on a wide range of annual and perennial bedding plants, potted flowers, foliage plants, deciduous trees and shrubs, and fruits and vegetables grown in protected environments. Serenade Soil DPZ enhances germination and plant growth by suppressing diseases caused by *Rhizoctonia*, *Pythium*, *Fusarium*, *Verticillium*, *Phytophthora*, and other diseases.

APPLICATION INSTRUCTIONS: Mix 1 qt [(32 fl oz)] to 6 qt [(192 fl oz)] of Serenade Soil DPZ with 100 [- 300] gallons of water. Use the stated higher application rates under conditions of heavy disease pressure. Apply finished mixture at a rate to thoroughly soak the growing media through the root zone as a drench or directed spray using hand held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler irrigation systems. Begin applications during or after seeding, sticking of cuttings or after transplanting to propagation beds, containers, pots or trays. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle. Serenade Soil DPZ can be mixed with chemical fungicides registered for soil applications. See application rate tables for more detailed application instructions.

Application Rates of Serenade Soil DPZ When Used as a Soil Drench in Field, Greenhouses, Glasshouses, Shadehouses, or Nurseries [Outdoors and Indoors] [Open or Enclosed]

Crops	Disease	Rate qt/100 gallons spray mix	Application Instructions
Ornamentals Trees Shrubs Annuals Perennials Flowering Plants Tropical Plants Bedding Plants Container Plants Potted Plants Foliage Plants Deciduous Trees Deciduous Shrubs Forestry Seedlings Fruits Vegetables and other crops grown in greenhouses and open and enclosed nurseries	<i>Armillaria</i> spp. <i>Dothistroma pini</i> <i>Fusarium</i> spp. <i>Ovulinia</i> spp. <i>Pellicularia rolfsii</i> <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Sclerotinia</i> spp. <i>Sclerotium</i> spp. <i>Stromatinia gladioli</i> <i>Verticillium</i> spp.	1 - 6	<p>Soil Drench Uses: Field, Greenhouses, Glasshouses, Shadehouses, Indoors/Outdoors, Open And Enclosed Nurseries Mix 1 qt to 6 qt of Serenade Soil DPZ with 100 [-300] gallons of water. For each treatment, apply no more than 6 qt of Serenade Soil DPZ per acre; equivalent to 4.4 fl oz of Serenade Soil DPZ per 1000 ft²[sq ft]. Use the stated higher application rates under conditions of heavy disease pressure.</p> <p>Apply finished mixture at a rate to thoroughly soak the growing media through the root zone as a drench or directed spray using hand held, mechanical or motorized spray equipment, or as a chemigation drench or directed spray using applicable sprinkler irrigation systems. For each treatment, apply no more than 6 qt of Serenade Soil DPZ per acre; equivalent to 4.4 fl oz of Serenade Soil DPZ per 1000 ft²[sq ft]. Begin applications during or after seeding, sticking of cuttings or after transplanting to propagation beds, containers, pots or trays. Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle. Serenade Soil DPZ can be mixed with chemical fungicides registered for soil applications.</p> <p>Pre-plant Broadcast or Band Uses at Planting: Field, Indoors/Outdoors, Open Nurseries Mix 1 qt to 6 qt of Serenade Soil DPZ with 100 [-300] gallons of water. For each treatment, apply no more than 6 qt of Serenade Soil DPZ per acre; equivalent to 4.4 fl oz of Serenade Soil DPZ per 1000 ft² [sq ft]. Apply before planting to give uniform ground coverage. Use the stated higher application rates under conditions of heavy disease pressure. Incorporate solution to depths of soil similar to planting depth of bulbs/seeds. Bulbs/seeds may be planted immediately after solution is incorporated or within one week of this date. For each treatment, apply no more than 6 qt of Serenade Soil DPZ per acre; equivalent to 4.4 fl oz of Serenade Soil DPZ per 1000 ft²[sq ft]. Optimal performance is obtained when combined with preventative drench treatments repeated every 21 to 28 days throughout the growing cycle. Serenade Soil DPZ can be mixed with chemical fungicides registered for soil applications.</p>

Turf, Lawns, Sod, Golf Courses (Greens, Tees, Fairways, And Roughs), And Ornamental Turf Use: [Agricultural], [Commercial], [Residential Use]

Serenade Soil DPZ is a broad spectrum biofungicide for use in the prevention, suppression and aiding in control of listed soil-borne turf and lawn diseases.

APPLICATION INSTRUCTIONS: Apply at the rate of 2 - 10 fl oz of Serenade Soil DPZ per 1000 sq. ft. of surface area. Apply in sufficient water to provide thorough coverage, depending on the application equipment. Two gallons of water per 1000 sq ft of surface is commonly used. See application rate tables for more detailed application instructions.

Application Rates of Serenade Soil DPZ for Turf, Lawns, Sod, Golf Courses (Greens, Tees, Fairways and Roughs), and Ornamental Turf

Crops	Disease	Rate fl oz/1000 sq ft of surface area	Application Instructions
Turf, Lawns, Sod, Golf Courses, (Fairways, Roughs, Greens, Tees) Seed production grasses Bentgrass Bermudagrass Bluegrass Dichondra Fescue Orchardgrass Poa annua Ryegrass St. Augustine Zoysia Mixtures and other grasses or ornamental turf	Brown Patch <i>Rhizoctonia solani</i>	2 - 10 fl oz	Apply at the rate of 2 fl oz to 10 fl oz of Serenade Soil DPZ per 1000 sq ft of surface area. Apply in sufficient water to provide thorough coverage, depending on the application equipment. Two gallons of water per 1000 sq ft of surface is commonly used. After application the treated area should be watered to wash Serenade Soil DPZ down to the soil level. Begin applications when conditions are conducive to disease development. Continue applications on 7- to 10-day intervals or as needed. Under moderate to severe disease pressure, for improved performance, increase rates and reduce spray intervals as stated or use Serenade Soil DPZ in a tank-mix or rotational program with other registered fungicides. Aids in control of: Brown Patch, Dollar Spot, Powdery Mildew, Rust, Anthracnose and Gray Leaf Spot. [Optional/Alternate Statements / Examples of Mixing/Application Instructions are in Brackets below] [Mix at the rate of 1 to 5 fl oz of Serenade Soil DPZ per gallon of water and apply spray solution at the rate of 2 gallons per 1000 sq ft (equivalent to 2 to 10 fl oz of Serenade Soil DPZ per 1000 sq ft of turf).] [Mix at the rate of 2 to 10 fl oz of Serenade Soil DPZ per gallon of water and apply spray solution at the rate of one gallon per 1000 sq ft of turf (equivalent to 2 to 10 fl oz of Serenade Soil DPZ per 1000 sq ft of turf).] [Mix at the rate of 5 fl oz of Serenade Soil DPZ per gallon of water when included in a tank-mix with other registered fungicides.] [Mix a 1% to 4% solution and apply spray solution at the rate of 2 gallons per 1000 sq. ft. of turf (equivalent to 2.5 to 10 fl oz of Serenade Soil DPZ per 1000 sq ft of turf).] [Mix a 2% to 8% solution and apply spray solution at the rate of 1 gallon per 1000 sq ft of turf (equivalent to 2.5 to 10 fl oz of Serenade Soil DPZ per 1000 sq ft of turf).]
	Dollar Spot <i>Lanzia</i> spp. <i>Moellerodiscus</i> spp. <i>Sclerotinia</i> <i>homeocarpa</i>		
	Leaf Spot <i>Helminthosporium</i> spp.		
	Gray Snow Mold <i>Typhula</i> spp.		
	Pink Snow Mold <i>Fusarium nivale</i>		

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

PESTICIDE STORAGE: Store in a dry area inaccessible to children. Store in original containers only. Keep container closed when not in use.

PESTICIDE DISPOSAL: To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or disposal program (often such programs are run by state or local governments or by industry).

CONTAINER HANDLING: [For 1.0-gallon, 2.5-gallon, 3-gallon, or 5-gallon plastic containers] - Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn, unless allowed by state and local ordinances. If burned, stay out of smoke.

[For 30-gallon plastic containers] - Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn, unless allowed by state and local ordinances. If burned, stay out of smoke.

[For 110-gallon or larger returnable mini-bulk containers] – Return empty container for reuse. Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn, unless allowed by state and local ordinances. If burned, stay out of smoke.

[batch codes are sticker applied to the front panel of every label on every product container]

IMPORTANT: READ BEFORE USE

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product at once for a refund of the purchase price. By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties, and Limitations of Liability. These terms may only be modified by a written document signed by a duly authorized representative of Bayer CropScience LP.

CONDITIONS: The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Bayer CropScience LP. All such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BAYER CROPSCIENCE LP MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, THAT EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. No agent of Bayer CropScience LP is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BAYER CROPSCIENCE LP DISCLAIMS ANY LIABILITY WHATSOEVER FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

LIMITATIONS OF LIABILITY: TO THE EXTENT CONSISTENT WITH APPLICABLE LAW THE EXCLUSIVE REMEDY OF THE USER OR BUYER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE PAID, OR AT BAYER CROPSCIENCE LP'S ELECTION, THE REPLACEMENT OF PRODUCT.

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Serenade® is a registered trademark of Bayer CropScience LP.

DPZ is a trademark of Bayer CropScience LP.

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[Placeholder for **OMRI**
Listed]

PRODUCED FOR



Bayer CropScience

Bayer CropScience LP
P.O. Box 12014, 2 T.W. Alexander Drive
Research Triangle Park, North Carolina 27709
1-866-99BAYER (1-866-992-2937)

SERENADE® SOIL DPZ™

AN AQUEOUS SUSPENSION BIOFUNGICIDE
SUB-LABEL B

For Seed Treatment Use

34/61

SERENADE® SOIL DPZ™

[An Aqueous Suspension Biofungicide]

[Optional/Alternate Statement: "NOP Logo: For Organic Production"]

[Optional/Alternate Statement: "NOP Logo: Can be Used for Organic Production"]

ACTIVE INGREDIENT:

Bacillus subtilis strain QST 713 variant Soil* 1.57%

OTHER INGREDIENTS.....98.43%

TOTAL.....100.00%

*Contains a minimum of 1 x 10⁹ cfu/g

EPA Registration No. 264-1145

EPA Est. No.:

For **MEDICAL** And **TRANSPORTATION** Emergencies **ONLY** Call 24 Hours A Day 1-800-334-7577
For **PRODUCT USE** Information 1-866-99BAYER (1-866-992-2937)

KEEP OUT OF REACH OF CHILDREN CAUTION

[Reference Statement for Booklets: For **ADDITIONAL PRECAUTIONARY STATEMENTS** and **DIRECTIONS FOR USE**: See Inside Booklet. See **FIRST AID STATEMENT** on the back panel.]

[**USE OF PRODUCT INDICATES ACCEPTANCE OF "CONIDITIONS FOR SALE AND WARRANTY"**]

Bayer CropScience LP
P.O. Box 12014, 2 T.W. Alexander Drive
Research Triangle Park, North Carolina 27709

Net Contents:

PRECAUTIONARY STATEMENTS

CAUTION

FIRST AID

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
 In case of emergency call toll free the Bayer CropScience Emergency Response Telephone No. 1-800-334-7577.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Unless specifically differentiated, the PPE requirements that follow apply to both Worker Protection Standard (WPS) uses (in general, agricultural-plant uses are covered by the Worker Protection Standard (40 CFR Part 170)) and Non-WPS uses.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes and socks

Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

[OPTIONAL: ENGINEERING CONTROLS]

[OPTIONAL STATEMENT: When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240(d)(4-6)), the handler PPE requirements may be reduced or modified as specified in the WPS.]

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

For Seed Treatment Use: Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate. Cover spilled seed or collect spilled seed from soil surface.

EMERGENCY INFORMATION

For emergencies such as leaks or spills, call 24-hour toll-free BAYER hotline at 1-800-334-7577.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation. [For use only as described on this label. Not for isolation or deformulation. Do not culture.]

[Note to the reviewer: All uses on the label may be for Commercial and or Non-commercial (on agricultural establishments).]

[For Commercial Seed Treatment Use: Not for use on agricultural establishments in hopper-box, planter-box, slurry-box or other seed treatment applications at or immediately before planting. The U.S. Environmental Protection Agency requires the following statements on containers containing seed treated with Serenade® Soil DPZ™:

- Store treated seed away from food and feedstuff
- Do not allow children, pets or livestock to have access to treated seeds.
- Treated seeds exposed on soil surface may be hazardous to wildlife.
- Cover or collect treated seeds spilled during loading and planting (such as in row ends).
- Dispose of all excess treated seed by burying seed away from bodies of water.
- Dispose of seed packaging or containers in accordance with local requirements.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Keep unprotected persons out of treated areas until sprays have dried.

Note: This product does not contain dye and is not covered by an appropriate tolerance, tolerance exemption, or other clearance under the Federal Food, Drug and Cosmetic Act. To comply with 40 CFR 153.155, therefore, all seed treated commercially with this product must be colored with an EPA-approved dye or colorant of a suitable color to prevent accidental use as food for man or feed for animals.]

[Seed Treatment Use on Agricultural Establishments in hopper-box, planter-box, slurry-box or other seed treatment applications at or immediately before planting.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 4 hours.

Exception: If the seed is treated with the product and the seed is soil injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

PPE required for early entry to treated areas (that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil or water is:

- coveralls
- waterproof gloves
- shoes plus socks

BASIC USE INFORMATION

Serenade Soil DPZ is a broad spectrum biofungicide seed treatment for the prevention, suppression and control of soil borne diseases that attack root systems. Serenade Soil DPZ enhances germination and plant growth by suppressing soil diseases such as those caused by *Rhizoctonia*, *Pythium*, *Fusarium*, *Aspergillus* and *Phytophthora*. Additionally, Serenade Soil DPZ has been shown to increase nodulation of nitrogen-fixing bacteria when used on many legumes.

INTEGRATED PEST MANAGEMENT (IPM)

Integrate Serenade Soil DPZ into an overall disease and pest management strategy whenever fungicide use is necessary. Follow practices known to reduce disease development. Consult local agricultural authorities for specific IPM strategies developed for your crop(s) and location.

Be sure use of this product conforms to resistance management strategies.

USE RATE DETERMINATION

Carefully read and follow all label directions, use rates and restrictions. Prepare only the amount of product solution required to treat the given amount of seed.

APPLICATION INSTRUCTIONS

[For Commercial Seed Treatment: Serenade SOIL DPZ as a seed treatment may be applied as a water-based slurry alone or with other registered seed treatment insecticides and fungicides through standard slurry or mist commercial seed treatment equipment.]

[additional/alternate statement:

[For Seed Treatment Use on Agricultural Establishments in hopper-box, planter-box, slurry-box or other seed treatment applications at or immediately before planting: Do not store excess treated seeds beyond planting time.]

For improved performance use Serenade Soil DPZ in a program with other registered fungicides for seed treatment.

MIXING INSTRUCTIONS

MIXING: Serenade Soil DPZ may be mixed with other registered pesticides to enhance seed germination. This product cannot be mixed with any product with a prohibition against such mixing. When mixing Serenade Soil DPZ with other registered pesticides, always read and follow all use directions, restrictions, and precautions of both Serenade Soil DPZ and the mix partner(s). Use of the resulting mix must be in accordance with the more restrictive label limitations and precautions. Do not exceed label dosage rates.

COMPATIBILITY: Do not combine Serenade Soil DPZ in the slurry with pesticides, or fertilizers if there has been no previous experience or use of the combination to show it is physically compatible, effective and non-injurious under your use conditions.

Serenade Soil DPZ is compatible with many commonly used pesticides, but has not been fully evaluated with all of these.

For Use as a Seed Treatment:

To mix when using with other chemical insecticide or fungicide seed treatments: first add the chemical insecticides or fungicides to the slurry mix with approximately 1/2 of the required water. Slowly add the Serenade Soil DPZ to the slurry until a suspension is obtained. Add the remainder of the water and maintain continuous agitation. Do not store mixed slurries for more than 4 hours.

To mix when using only Serenade Soil DPZ seed treatment: Add 1/2 the required water to the slurry mix. Slowly add the Serenade Soil DPZ to the slurry until a suspension is

obtained. Add the remainder of the water and maintain continuous agitation. Do not store mixed slurries for more than 4 hours.

See application rate tables for more detailed application instructions.

Application Rates of Serenade Soil DPZ for Seed Treatment For Select Agricultural Crops			
Seed Crops	Disease Suppressed	Rate fl oz/100 pounds of seed	Application Instructions
Legume Vegetables Beans Sprouts Bean, Adzuki Bean, Black Blue Lake Bean, Broad Bean, Butter Bean, Cacao Bean, Dry Bean, Fava Bean, French Bean, Garden Bean, Garbanzo Bean, Green Bean, Kidney Bean, Lima Bean, Mung Bean, Navy Bean, Pea Bean, Pigeon Bean, Pinto Bean, Red Bean, String Bean, Sugar Bean, Snap and other fresh, dry, vine, fuel and forage legume vegetables grown for seed	<i>Alternaria</i> spp. <i>Anthraco</i>se spp. <i>Ascochyta</i> Blight <i>Fusarium</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.	1.0 – 3.0	For suppression of root diseases apply 1.0 to 3.0 fl oz per 100 lbs. of seed. For improvement of nodulation by <i>Rhizobium</i> , apply at 1.0 to 2.0 fl oz per 100 lbs of seed.

Seed Crops	Disease Suppressed	Rate fl oz/100 pounds of seed	Application Instructions
Canola Rapeseed	<i>Alternaria</i> spp. <i>Fusarium</i> spp. <i>Leptosphaeria</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Sclerotinia</i> spp.	3.0 – 5.0	For suppression of seedling and root disease apply 3.0 to 5.0 fl oz per 100 lbs of seed.
Corn Corn, Sweet Corn, Feed Corn, Field Corn, Fuel Corn, Pop	<i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.	3.0 – 5.0	For suppression of root diseases apply 3.0 to 5.0 fl oz per 100 lbs of seed
Cotton Cotton, Short Staple Cotton, Long Staple Cotton, Upland Cotton, Pima	<i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Phoma</i> spp. <i>Rhizoctonia</i> spp.	2.0 – 3.0	For suppression of seedling diseases, apply 2.0 to 3.0 fl oz per 100 lbs of seed.
Legume Forage and Grain Legume Vegetable Edible Legume Succulent Dry Legume Forage Legume Fuel	<i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.	1.0 – 3.0	For suppression of root diseases apply 1.0 to 3.0 fl oz per 100 lbs of seed.

Seed Crops	Disease Suppressed	Rate fl oz/100 pounds of seed	Application Instructions
Grain Cereal Crops Amaranth, Grain Grain Sorghum Grain Barley Grain Oat Grain Wheat Lupine, Grain	<i>Cochliobolus</i> spp. <i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Penicillium</i> spp. <i>Rhizoctonia</i> spp. <i>Stagonospora</i> spp. <i>Tilletia</i> spp. <i>Ustilago</i> spp.	1.0 – 2.0	For suppression of root diseases apply 1.0 to 2.0 fl oz per 100 lbs of seed.
Peanut	<i>Aspergillus</i> spp. <i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Rhizopus</i> spp. <i>Sclerotinia</i> spp.	2.0 – 4.0	For suppression of root diseases and for improvement of nodulation by <i>Rhizobium</i> , apply 2.0 to 4.0 fl oz per 100 lbs of seed.
Rice Rice, Indian Rice, sweet Rice, waxy Rice, wild	<i>Fusarium</i> spp. <i>Helminthosporium</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.	1.0 – 3.0	For suppression of seed diseases apply 1.0 to 3.0 fl oz per 100 lbs of seed.
Soybean	<i>Fusarium</i> spp. <i>Penicillium</i> spp. <i>Pythium</i> spp. <i>Phytophthora</i> spp. <i>Rhizoctonia</i> spp.	1.0 – 3.0	For suppression of root diseases or improvement of nodulation by <i>Bradyrhizobium</i> spp., apply 1.0 to 3.0 fl oz per 100 lbs of seed.
Sugar beet	<i>Aphanomyces</i> spp. <i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.	1.0 – 3.0	For suppression of seed diseases apply 1.0 to 3.0 fl oz per 100 lbs of seed.
Sunflower	<i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Phytophthora</i> spp. <i>Plasmopara</i> spp. <i>Rhizoctonia</i> spp.	1.0 – 3.0	For suppression of seed diseases apply 1.0 to 3.0 fl oz per 100 lbs of seed.

Seed Crops	Disease Suppressed	Rate fl oz/100 pounds of seed	Application Instructions
<p>Grass, Forage, Fodder, Hay</p> <p>Bahiagrass Grass, Pasture, Forage Grass, Pasture, Hay Grass, Pasture, Silage Grass, Rangeland, Forage Grass, Rangeland, Hay Grass, Rangeland, Silage Grass, Rangeland, Straw Savannah Grass, Straw Switch grass Sudangrass</p>	<p><i>Fusarium</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp.</p>	<p>1.0 – 3.0</p>	<p>For suppression of root diseases apply 1.0 to 3.0 fl oz per 100 lbs of seed.</p>

Application Rates of Serenade Soil DPZ for Seed Treatment For Flower, Grass, Bulb and Ornamental Crops			
Crops	Disease Suppressed	Rate fl oz /100 lbs of seed	Application Instructions
Grass Bluegrass Bentgrass Bermudagrass Dichondra Fescue Orchardgrass Poa annua St. Augustine Rye grass Zoysia Mixtures and other grass or ornamental turf seeds	<i>Fusarium spp.</i> <i>Pythium spp.</i> <i>Rhizoctonia spp.</i>	1.0 – 3.0	For suppression of root diseases apply 1.0 to 3.0 fl oz per 100 lbs of seed. Serenade Soil DPZ can be used for all types of grass seeds including those produced for Turf, Sod, Lawns, and Golf Courses.
Animal Feed, Nongrass Alfalfa	<i>Fusarium spp.</i> <i>Pythium spp.</i> <i>Rhizoctonia spp.</i>	0.1 – 3	For suppression of seedling and root diseases apply 0.1 to 3 fl oz per 100 lb of seed.
Bulb Vegetables Onion Garlic Shallots and other Bulb Vegetable Seeds	<i>Fusarium spp.</i> <i>Pythium spp.</i> <i>Rhizoctonia spp.</i>	1.0 – 3.0	For suppression of root diseases apply 1.0 to 3.0 fl oz per 100 lbs of seed.

Crops	Disease Suppressed	Rate fl oz /100 lbs of seed	Application Instructions
<p>Ornamental Plant Seeds</p> <p>Annual and Perennial Flower Seeds</p> <p>Forestry Seeds</p>	<p><i>Alternaria</i> spp. <i>Anthracnose</i> spp. <i>Ascochyta rabiei</i> <i>Aphanomyces</i> spp. <i>Aspergillus</i> spp. <i>Fusarium</i> spp. <i>Leptosphaeria</i> spp. <i>Macrophomina</i> spp. <i>Phoma</i> spp. <i>Phytophthora</i> spp. <i>Pythium</i> spp. <i>Rhizoctonia</i> spp. <i>Rhizopus</i> spp. <i>Sclerotinia</i> spp. <i>Sphacelotheca</i> spp. <i>Thielaviopsis</i> spp. <i>Ustilago</i> spp. <i>Verticillium</i> spp.</p>	<p>1.0 - 10.0</p>	<p>For suppression of root disease, apply 1.0 to 10.0 fl oz per 100 lbs of seed. Adjust rate accordingly to provide good coverage. Larger seeds, because of reduced surface area, require less product per 100 lbs than smaller seeds.</p>

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

PESTICIDE STORAGE: Store in a dry area inaccessible to children. Store in original containers only. Keep container closed when not in use.

PESTICIDE DISPOSAL: To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

CONTAINER HANDLING: [For 1.0-gallon, 2.5-gallon, 3-gallon, or 5-gallon plastic containers] - Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn, unless allowed by state and local ordinances. If burned, stay out of smoke.

[For 30-gallon plastic containers] - Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn, unless allowed by state and local ordinances. If burned, stay out of smoke.

[For 110-gallon or larger returnable mini-bulk containers] – Return empty container for reuse. Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available, or puncture and dispose of in a sanitary landfill or by incineration. Do not burn, unless allowed by state and local ordinances. If burned, stay out of smoke.

[batch codes are sticker applied to the front panel of every label on every product container]

IMPORTANT: READ BEFORE USE

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product at once for a refund of the purchase price. By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties, and Limitations of Liability. These terms may only be modified by a written document signed by a duly authorized representative of Bayer CropScience LP.

[FOR SEED TREATMENT ONLY: Treatment of highly mechanically damaged seed, or seed of known low vigor and poor quality, may result in reduced germination and/or reduction of seed and seedling vigor. Treat and conduct germination tests on a small portion of seed before committing the total seed lot to a selected chemical treatment. Due to seed quality conditions beyond the control of Bayer CropScience LP, no claims are made to guarantee germination of carry-over seed.]

CONDITIONS: The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Bayer CropScience LP. All such risks shall be assumed by the user or buyer.

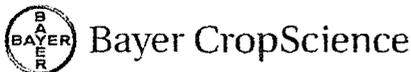
DISCLAIMER OF WARRANTIES: TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BAYER CROPSCIENCE LP MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, THAT EXTEND BEYOND THE STATEMENTS MADE ON THIS LABEL. No agent of Bayer CropScience LP is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, BAYER CROPSCIENCE LP DISCLAIMS ANY LIABILITY WHATSOEVER FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

LIMITATIONS OF LIABILITY: TO THE EXTENT CONSISTENT WITH APPLICABLE LAW THE EXCLUSIVE REMEDY OF THE USER OR BUYER FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE PAID, OR AT BAYER CROPSCIENCE LP'S ELECTION, THE REPLACEMENT OF PRODUCT.

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DPZ is a trademark of Bayer CropScience LP.
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[place holder for 

PRODUCED FOR



Bayer CropScience LP
P.O. Box 12014, 2 T.W. Alexander Drive
Research Triangle Park, North Carolina 27709
1-866-99BAYER (1-866-992-2937)

SERENADE® SOIL DPZ™

AN AQUEOUS SUSPENSION BIOFUNGICIDE
SUB-LABEL C

For Home & Garden Use

SERENADE® SOIL DPZ™

[An Aqueous Suspension Biofungicide]
 [Alternate Brand Name: Serenade® Soil DPZ Garden Disease Control Concentrate]
 [Alternate Brand Name: Serenade® Soil DPZ Garden Disease Control Ready to Spray]
 [An Aqueous Suspension Biofungicide]
 [For Home and Garden Use][For Home, Garden and [Lawn] [(Turf)] Use]
 [Optional/Alternate Statement: "NOP Logo: For Organic Gardening"]
 [Optional/Alternate Statement: "NOP Logo: Can be Used for Organic Gardening"]
 ["NOP Logo: For Organic Lawn Care"]

[Optional Claims:]

[Apply any time of day] [Will not burn or injure [leaves] [or [lawns] [(turf)] [sod]]
 [Fungicide (or Biofungicide) that attacks harmful garden soil and lawn soil diseases]
 [[For] Use on Roses, Vegetables, Fruits, Flowering Plants, Trees, Shrubs and Lawns
 [(Turf)] [Sod]] at planting
 [Controls [and other listed diseases]]
 [Suppresses [and other listed diseases]]
 [Concentrate] [Same active ingredient used by farmers]
 [Effectively controls or prevents a wide range of fungal and bacterial soil diseases]
 [Promotes healthier gardens]
 [Prevents and controls harmful garden soil diseases]

[Optional Claims for Lawn and Turf Label:]

[Prevents and controls harmful (major) lawn diseases (including Brown Patch, Dollar Spot, Red Thread)]
 [Controls Brown Patch, Dollar Spot and other listed [common] lawn diseases]
 [Use on all lawns to prevent and control major lawn diseases]
 [Promotes healthy, disease-free lawns] ["Easy, [.] [!] Attach Hose and Spray. [!]"]
 [Same active ingredient used on golf courses] [Promotes Greener, Healthier Lawns]
 [Promotes greener, healthy, disease-free lawns]
 [Easy to use]

50/61

ACTIVE INGREDIENT:	
<i>Bacillus subtilis</i> strain QST 713 variant Soil*	1.57%
OTHER INGREDIENTS	<u>98.43%</u>
TOTAL	100.00%

*Contains a minimum of 1×10^9 cfu/g
 EPA Registration No. 264-1145

EPA Est. No.:

For **MEDICAL** And **TRANSPORTATION** Emergencies **ONLY** Call 24 Hours A Day 1-800-334-7577
 For **PRODUCT USE** Information Call 1-800-331-2867

KEEP OUT OF REACH OF CHILDREN
CAUTION

[Reference Statement for Booklets: For **FIRST AID STATEMENT**, **ADDITIONAL PRECAUTIONARY STATEMENTS** and **DIRECTIONS FOR USE**: See Inside Booklet.]
 [Peel back tab for First Aid and Precautionary Statements, Storage and Disposal Instructions and Directions for Use.]

Bayer CropScience LP
 P.O. Box 12014, 2 T.W. Alexander Drive
 Research Triangle Park, North Carolina 27709

[USE OF PRODUCT INDICATES ACCEPTANCE OF "CONIDITIONS FOR SALE AND WARRANTY"]

Net Contents:

PRECAUTIONARY STATEMENTS

CAUTION

FIRST AID

- Have the product container or label with you when calling a poison control center or doctor or going for treatment.
- In case of emergency call toll free the Bayer CropScience Emergency Response Telephone No. 1-800-334-7577. Have a product container or label with you when calling a poison control center or doctor, or going for treatment.

ENVIRONMENTAL HAZARDS

To protect the environment, do not allow pesticide to enter or run-off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid run-off to water bodies or drainage systems.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. [For use only as described on this label. Not for isolation or deformulation. Do not culture.]

BASIC USE INFORMATION

Serenade Soil DPZ is a broad spectrum biofungicide for the prevention, suppression and control of soil borne diseases on a wide range of fruits and vegetables. Serenade Soil DPZ enhances germination and plant growth by suppressing soil diseases such as those caused by *Rhizoctonia*, *Pythium*, *Fusarium*, *Verticillium* and *Phytophthora*. See the application tables for specific information.

[Serenade Soil DPZ can be used on all fruits and vegetables used in canning.]

[QUICK FACTS] [READ THE LABEL FIRST!] [READ LABEL FIRST graphic]

FOR ALL USES AND TYPES OF APPLICATION EQUIPMENT

WHEN TO USE

- Begin applications during or after seeding, sticking of cuttings or after transplanting to propagation [alternate word : planting] beds, containers, pots, trays or soil.
- Optimal performance is obtained with preventative treatments repeated every 21 to 28 days throughout the growing cycle.

BEFORE YOU USE

Read and follow these directions when using:

- Do not allow spray to drift from application site.
- [[For Pressurized Hand-Held Sprayer and Spray Trigger Bottle Use Only] - Do not allow spray mixture to stand overnight or for prolonged periods.]

[FOR BEST RESULTS]

- [Shake Well Before Use.]
- [Spray to ensure thorough coverage.]
- [Repeat at 21 to 28 days throughout the growing cycle.]

[Specific Application Instructions in four groups as appropriate for the type of sprayer]

[Pressurized Hand-Held Sprayer and Spray Trigger Bottle] [Serenade Soil DPZ can be applied in commonly used pressurized hand-held sprayers and spray trigger bottles.]

HOW TO USE [Alternate statement: MIXING AND APPLICATION INSTRUCTIONS]

- Shake Well Before Use
- Fill sprayer or bottle with appropriate amounts of concentrate and water (use water only).
- Mix the spray solution thoroughly.
- Keep spray solution agitated during application.

HOW MUCH TO USE

[For] Fruits, Vegetables, Nuts [e.g. Apples/Pears, Broccoli, Carrot, Cherries, Cucurbits, Grapes, Leafy Vegetables, Onions/Garlic, Pepper, Tomato, and Walnuts] during or after seeding, sticking of cuttings or after transplanting to propagation beds, containers, pots or trays and throughout the growing season:

- 2 fl oz (¼ cup = 4 TBSP) to 4 fl oz (½ cup = 8 TBSP) of Serenade Soil DPZ per gallon of water.
- Apply finished mixture to thoroughly soak the soil [growing media] [or growing media].

[For] [Annual and Perennial] Ornamental Plants, Flowers, Flowering Plants, Tropical Plants, Trees and Shrubs] during or after seeding, sticking of cuttings or after transplanting to propagation beds, containers, pots or trays and throughout the growing season:

- 2 fl oz (¼ cup = 4 TBSP) to 4 fl oz (½ cup = 8 TBSP) of Serenade Soil DPZ per gallon of water.
- Apply finished mixture to thoroughly soak the soil [growing media] [or growing media].

[For] Lawns [, Turf, Sod and Ornamental Turf] during or after seeding, and throughout the growing season:

- 2 fl oz (¼ cup = 4 TBSP) to 8 fl oz (1 cup = 16 TBSP) of Serenade Soil DPZ per gallon of water.
- Apply at a rate of 1 gallon of spray solution per 1,000 square feet of lawn [or Turf, Sod and Ornamental Turf].

[Optional/Alternate: [For] Lawns [, Turf, Sod and Ornamental Turf] during or after seeding, and throughout the growing season:

- 1 fl oz (⅓ cup = 2 TBSP) to 4 fl oz (½ cup = 8 TBSP) of Serenade Soil DPZ per gallon of water.
- Apply at a rate of 2 gallons of spray solution per 1,000 square feet of lawn [or Turf, Sod and Ornamental Turf] (equivalent to 2 to 8 fl oz of Serenade Soil DPZ per 1,000 square feet of lawn [or Turf, Sod and Ornamental Turf]).]

[Hose-End Sprayer]

[Alternate statement: How To Use Hose-end Sprayer]

HOW TO USE [APPLICATION INSTRUCTIONS]

- Shake Well Before Use
- Follow hose-end sprayer directions to determine how to fill, set dial, clean and disconnect from hose.
- Set dial on sprayer to deliver rates of Serenade Soil DPZ [this product] per gallon of water as directed below.

HOW MUCH TO USE

- No mixing or measuring is needed. Dilutes automatically as you spray.
- Apply finished mixture to thoroughly soak the [growing media] [soil].

[For] Fruits, Vegetables, Nuts [e.g. Apples/Pears, Broccoli, Carrot, Cherries, Cucurbits, Grapes, Leafy Vegetables, Onions/Garlic, Pepper, Tomato, and Walnuts] during or after seeding, sticking of cuttings or after transplanting to propagation beds, containers, pots or trays and throughout the growing season:

- Set sprayer to apply 2 fl oz (¼ cup = 4 TBSP) to 4 fl oz (½ cup = 8 TBSP) of Serenade Soil DPZ per gallon of water.
- Apply finished mixture to thoroughly soak the soil [growing media] [or growing media].

[For] [Annual and Perennial] Ornamental Plants, Flowers, Flowering Plants, Tropical Plants, Trees and Shrubs] during or after seeding, sticking of cuttings or after transplanting to propagation beds, containers, pots or trays and throughout the growing season:

- Set sprayer to apply 2 fl oz (¼ cup = 4 TBSP) to 4 fl oz (½ cup = 8 TBSP) of Serenade Soil DPZ per gallon of water.
- Apply finished mixture to thoroughly soak the soil [growing media] [or growing media] [growing media] [soil].

[For] Lawns [, Turf, Sod and Ornamental Turf] during or after seeding, and throughout the growing season:

- Set sprayer to apply 2 fl oz (¼ cup = 4 TBSP) to 8 fl oz (1 cup = 16 TBSP) of Serenade Soil DPZ per gallon of water.
- Apply at a rate of 1 gallon of spray solution per 1,000 square feet of lawn [or Turf, Sod and Ornamental Turf].

[Optional/Alternate: [For] Lawns [, Turf, Sod and Ornamental Turf] during or after seeding, and throughout the growing season:

- Set sprayer to apply 1 fl oz (⅛ cup = 2 TBSP) to 4 fl oz (½ cup = 8 TBSP) of Serenade Soil DPZ per gallon of water.
- Apply at a rate of 2 gallons of spray solution per 1,000 square feet of lawn [or Turf, Sod and Ornamental Turf] (equivalent to 2 to 8 fl oz of Serenade Soil DPZ per 1,000 square feet of lawn [or Turf, Sod and Ornamental Turf]).]

[Optional/Alternative: [For] Lawns [, Turf, Sod and Ornamental Turf] during or after seeding, and throughout the growing season:

- Set sprayer to apply 2 fl oz (¼ cup = 4 TBSP) to 4 fl oz (½ cup = 8 TBSP) of Serenade Soil DPZ per gallon of water.
- Apply one gallon of spray solution to thoroughly cover 500 square feet of lawn [or Turf, Sod and Ornamental Turf] (equivalent to 4 to 8 fl oz of Serenade Soil DPZ per 1,000 square feet of lawn [or Turf, Sod and Ornamental Turf].)

[Optional/Alternative: [For] Lawns [, Turf, Sod and Ornamental Turf] during or after seeding, and throughout the growing season:

- Set sprayer to apply 1 fl oz (½ cup = 2 TBSP) to 2 fl oz (¼ cup = 4 TBSP) of Serenade Soil DPZ per gallon of water.
- Apply one gallon of spray solution to thoroughly cover 250 square feet of lawn [or Turf, Sod and Ornamental Turf] (equivalent to 4 to 8 fl oz of Serenade Soil DPZ per 1,000 square feet of lawn [or Turf, Sod and Ornamental Turf].)

[Hose-End Sprayer on Ready to Spray Bottle]

[Note to Reviewer: These instructions will recommend either 4 fl oz or 5 fl oz of Serenade Soil DPZ applied depending upon the nozzle that is used. Nozzles are manufactured to deliver set volumes of product and cannot be altered by the consumer.]

HOW MUCH TO USE

- No mixing or measuring is needed. Dilutes automatically as you spray.

[COVERAGE]

- [For Lawns [, Turf,] [Sod] [And Ornamental Turf]: Treats up to 5600 square feet. [(28 fl oz size)]
- [Alternate Statement: Treats up to 6400 square feet. [(32 fl oz size)]]

HOW TO USE [Alternate Statement: APPLICATION INSTRUCTIONS]

For Lawns [, Turf,] [Sod] [And Ornamental Turf] during or after seeding, and throughout the growing season:

1. Shake container well before using.
2. Make sure the nozzle is in the "OFF" position with the safety tab in the valve notch.
3. Securely attach a garden hose to the hose-end spray nozzle, tightening nozzle.
4. Calculate the square feet of the area to be treated by multiplying length by width. 4 [alternate text: 5] fl oz of Serenade Soil DPZ - will treat 1000 square feet of lawn [, Turf, Sod and Ornamental Turf].
5. Turn on water at faucet. Extend hose to the farthest area to be treated and work backward toward the faucet.
6. To begin spraying, point nozzle at the lawn [, Turf, Sod and Ornamental Turf] to be treated and bend the safety tab back while turning the dial clockwise. The water will automatically start mixing and spraying. Walk backwards at a steady pace sweeping the spray in an overlapping motion to cover the area to be treated. Refer to the sight gauge on the side of the bottle to guide coverage (example: When 1 fl oz of [Serenade Soil DPZ] [this product] has been used, you should have covered 200 [Alternate text: 250] square feet of lawn [, Turf, Sod and Ornamental Turf]).
7. To turn the sprayer off, turn the dial in the opposite direction (counter-clockwise) until the water stops flowing and the safety tab engages. Turn the water off at the faucet. To relieve pressure before detaching sprayer, bend the safety tab back and turn the dial on (clockwise) until the water stops spraying. Then, turn the dial back to the off position until the safety tab engages.
8. Detach the hose-end sprayer from the hose and store unused product in a cool, dark place until its next use.

[Hose-End Sprayer on Ready to Spray Bottle]

[Note to Reviewer: This nozzle is calibrated to deliver 2 - 4 fl oz of Serenade Soil DPZ per gallon of spray solution applied.]

HOW MUCH TO USE

- No mixing or measuring is needed. Dilutes automatically as you spray.
- Apply finished mixture to thoroughly soak the soil [growing media] [or growing media].

[COVERAGE]

- [For other Uses:] Makes up to 14 gallons finished spray. [(28 fl oz size)]
- [Alternate Statement: Makes up to 16 gallons finished spray [(32 fl oz size)]

[HOW TO USE] [Alternate Statement: APPLICATION INSTRUCTIONS]

[For] Fruits, Vegetables, Nuts [(e. g. Apples/Pears, Broccoli, Carrot, Cherries, Cucurbits, Grapes, Leafy Vegetables, Onions/Garlic, Pepper, Tomato, and Walnuts)] [Annual and Perennial] [Ornamental Plants, Flowers, Flowering Plants, Tropical Plants, Trees and Shrubs] during or after seeding, sticking of cuttings or after transplanting to propagation [alternate: planting] beds, containers, pots or trays and throughout the growing season:

1. Shake container well before using.
2. Make sure the nozzle is in the "OFF" position with the safety tab in the valve notch.
3. Securely attach a garden hose to the hose-end spray nozzle, tightening nozzle.
4. Turn on water at faucet
5. To begin spraying, point nozzle at the soil [growing media] [or growing media] area to be treated and bend the safety tab back while turning the dial clockwise. The water will automatically start mixing and spraying.
6. Spray soil thoroughly, sweeping the spray in an overlapping motion to cover the area to be treated.
7. To turn the sprayer off, turn the dial in the opposite direction (counter-clockwise) until the water stops flowing and the safety tab engages. Turn the water off at the faucet. To relieve pressure before detaching sprayer, bend the safety tab back and turn the dial on (clockwise) until the water stops spraying. Then, turn the dial back to the off position until the safety tab engages.
8. Detach the hose-end sprayer from the hose and store unused product in a cool, dark place until its next use.

[Alternate Statement: WHERE TO USE: VEGETABLES, FRUITS, NUTS, FLOWERS, FLOWERING PLANTS, TROPICAL PLANTS, TREES, SHRUBS, and ORNAMENTALS during or after seeding, sticking of cuttings or after transplanting to propagation [alternate: planting] beds, containers, pots or trays.]

[Alternate Statement: USE SITES: VEGETABLES, FRUITS, NUTS, FLOWERS, FLOWERING PLANTS, TROPICAL PLANTS, TREES, SHRUBS, and ORNAMENTALS during or after seeding, sticking of cuttings or after transplanting to propagation beds, containers, pots or trays.]

[HOME and GARDEN] [VEGETABLE[S], FRUIT[S] AND NUT[S] PLANTS during or after seeding, sticking of cuttings or after transplanting to propagation beds, containers, pots or trays:]

[Artichoke, Asparagus

Berries (Blueberry, Blackberry, Raspberry, Loganberry, Huckleberry, Cranberry, Gooseberry, Elderberry, Currant, and other berries)

Brassica Leafy Vegetables (Broccoli, Cabbage, Cauliflower, Brussels Sprouts, Collards, Kale, Mustard Greens, Kohlrabi and other brassica leafy vegetables)

Bulb Vegetables (Onion, Garlic, Shallots and other bulb vegetables)

Citrus Fruit (Orange, Grapefruit, Lemon, Tangerine, Tangelo, Pummelo and other citrus fruit)

Cucurbit Vegetables (Cucumber, Cantaloupe, Melon, Muskmelon, Squash, Watermelon and other cucurbit vegetables)

Fruiting Vegetables (Pepper, Tomato, Eggplant and other fruiting vegetables)

Grape, Herbs and Spices, Leafy Vegetables (Lettuce, Celery, Spinach, Parsley, Radicchio and other leafy vegetables)

Legume Vegetables (Beans, Green Beans, Snap Beans, Shell Beans, Dry Beans, Garbanzo Beans, Lima Beans, Peas, Chick Peas, Split Peas, Lentils and other legume vegetables)

Mango, Mint, Olive, Papaya, Peanuts

Pome Fruit (Apple, Crabapple, Pear, Quince, Mayhaw and other pome fruit)

Root and Tuber Vegetables (Carrot, Potato, Sweet Potato, Beets, Ginger, Horseradish, Radish, Ginseng, Turnip and other root and tuber vegetables)

Stone Fruit (Apricot, Cherry, Nectarine, Peach, Plum, Prune and other stone fruit)

Strawberry, Sweet Corn, Watercress

Tree Nuts (Almond, Pistachio, Pecan, Walnut, Filberts, Chestnut, Cashew, Beechnut, Butternut and other tree nuts)]

[[RESIDENTIAL] GREENHOUSE PLANTS during or after seeding, sticking of cuttings or after transplanting to propagation beds, containers, pots or trays:]

[Brassica Leafy Vegetables (Broccoli, Cabbage, Cauliflower, Brussels Sprouts, Collards, Kale, Mustard Greens, Kohlrabi and other brassica leafy vegetables)

Bulb Vegetables (Onion, Garlic, Shallots and other bulb vegetables)

Cucurbit Vegetables (Cucumber, Cantaloupe, Melon, Muskmelon, Squash, Watermelon and other cucurbit vegetables)

Fruiting Vegetables (Pepper, Tomato, Eggplant and other fruiting vegetables)

Herbs and Spices

Leafy Vegetables (Lettuce, Celery, Spinach, Parsley, Radicchio and other leafy vegetables)

Root and Tuber Vegetables (Carrot, Potato, Sweet Potato, Beets, Ginger, Horseradish, Radish, Ginseng, Turnip and other root and tuber vegetables)

Strawberry]

[FLOWERS, FLOWERING PLANTS, TROPICAL PLANTS, TREES, SHRUBS, and ORNAMENTALS during or after seeding, sticking of cuttings or after transplanting to propagation beds, containers, pots or trays:]

[Roses]

[Other Ornamentals, Trees, Shrubs, Flowers, Flowering Plants, and Tropical Plants]

DISEASES CONTROLLED [OR SUPPRESSED] [OR PREVENTED] [BY SERENADE SOIL DPZ]

Armillaria spp.

Fusarium spp.

Phytophthora spp.

Pythium spp.

Rhizoctonia spp.

Sclerotinia spp.

Sclerotium spp.

Verticillium spp.

[SERENADE SOIL DPZ] [MAY BE USED ON LAWNS [, TURF,] [SOD] [AND ORNAMENTAL TURF] during or after seeding [or after transplanting [turf,][sod]] and ornamental turf.]]

[ALTERNATE STATEMENT: WHERE TO USE]

[ALTERNATE STATEMENT: USE SITE]

Lawns [, Turf,] [Sod] [And Ornamental Turf] during or after seeding and throughout the growing season;

Bluegrass, Bentgrass, Bermudagrass, Dichondra, Fescue, Orchardgrass, Annual Bluegrass (*Poa annua*), St. Augustine, Ryegrass, Zoysia, Mixtures and other grasses or ornamental turf.

DISEASES CONTROLLED [OR SUPPRESSED] [OR PREVENTED] [BY SERENADE SOIL DPZ] [ON LAWNS [, TURF,] [SOD] [AND ORNAMENTAL TURF]]:

Anthrachnose [(*Colletotrichum graminicola*)]

Brown Patch [(*Rhizoctonia solani*)]

- Dollar Spot [(*Lanzia* spp., *Moellerodiscus* spp., formerly *Sclerotinia homeocarpa*)]
- Fairy Ring [(Various *Basidiomycetes*)]
- Fusarium Patch [(*Microdochium nivale*)]
- Gray Snow Mold
- Pink Snow Mold
- Powdery Mildew [(*Erysiphe graminis*)]
- Pythium Blight [(*Pythium aphanidermatum*)] [(*Pythium* spp.)]
- Red Thread [(*Laetisaria fuciformis*)]
- Rust [(*Puccinia* spp.)]
- Typhula Blight [(*Typhula* spp.)]

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

PESTICIDE STORAGE: Store in original container only. [Alternate: in an area inaccessible to children] [or Alternate: out of reach of children]. Keep container closed when not in use. Store at room temperature.

PESTICIDE DISPOSAL AND CONTAINER HANDLING:

Nonrefillable container. Do not reuse or refill this container.

If empty:

Place in trash or offer for recycling, if available.

If partly filled:

Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.

[batch codes are sticker applied to the front panel of every label on every product container]

IMPORTANT: READ BEFORE USE

Read the entire Directions for Use, Conditions, Disclaimer of Warranties and Limitations of Liability before using this product. If terms are not acceptable, return the unopened product container at once. By using this product, user or buyer accepts the following Conditions, Disclaimer of Warranties and Limitations of Liability.

CONDITIONS: The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Ineffectiveness, plant injury, other property damage, as well as other unintended consequences may result because of factors beyond the control of Bayer CropScience LP. Those factors include, but are not limited to, weather conditions, presence of other materials or the manner of use or application. All such risks shall be assumed by the user or buyer.

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PRODUCED FOR



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SERENADE® SOIL DPZ™ (PENDING) 02/25/2013, 04/05/2013, 05/03/13